

# Notice of Allowability

Application No.

10/649,735

Applicant(s)

SHIROTO ET AL.

Examiner

Jafar Parsa

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--  
claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included  
rewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS  
NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative  
he Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

☒ This communication is responsive to an application filed on 8/28/2003.

☒ The allowed claim(s) is/are 9-13 (renumbered 1-5 respectively).

☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.

☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some\* c) ☐ None of the:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the  
International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements  
oted below. Failure to timely comply will result in ABANDONMENT of this application.

**HIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF  
INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.

(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of  
Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of  
each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the  
attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

☐ Notice of References Cited (PTO-892)

☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8/28/2003

☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other \_\_\_\_\_.

Jafar Parsa  
Primary Examiner  
Art Unit: 1621

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below.

On page 2, line 4 of preliminary amendment filed on 8/28/2003 the phrase "allowed July 14, 2003" has been corrected to--now U.S. Pat. No. 6,656,978--.

Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. The following is an examiner's statement of reasons for allowance:

The carbon conversion in Yagi et al (EP0974551 A1) is defined by the formula given in col. 13 at page 8 as follows:  $\text{CH}_4 \text{ conversion} = (A-B)/A \times 100 \% = ([C]-B)/[C] \times 100 \%$

where [C] is moles of methane in the raw feed and B is moles of residual methane in the product.

On the other hand, carbon conversion efficiency Cf of the present invention is defined as  $C_f = \{[CO]/([C] + [CO_2])\} \times 100 \%$

Thus, applicants' Cf, unlike the "CH<sub>4</sub> conversion" of Yagi et al, takes into account the contribution of carbon dioxide to the reforming reaction. From the disclosure in Yagi et al, it is not possible to calculate carbon conversion efficiency Cf, synthesis gas production efficiency Yf and hydrogen to carbon monoxide ratio of the product synthesis gas. The calculation of Cf requires data for [CO], Yagi et al disclose neither [CO] nor its relationship to a variable for which data is given. Thus, the prior art of record neither anticipates nor renders the present claims obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 8 a.m.-4:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571)272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**J. PARSA**  
**PRIMARY EXAMINER**



Jafar Parsa  
Primary Examiner  
Art Unit 1621